DEPARTMENT OF TRANSPORTATION
DIVISION OF ENGINEERING SERVICES
Office of Structural Materials
Quality Assurance and Source Inspection

Bay Area Branch
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Contract #: 04-0120F4
Cty: SF/ALA Rte: 80 PM: 13.2/13.9
File #: 1.28

WELDING INSPECTION REPORT

Resident Engineer: Casey, William
Address: 333 Burma Road
City: Oakland, CA 94607

Report No: WIR-027247
Date Inspected: 28-Feb-2012

Project Name: SAS Superstructure
Prime Contractor: American Bridge/Fluor Enterprises, a JV
Contractor: American Bridge/Fluor Enterprises, a JV

OSM Arrival Time: 700
OSM Departure Time: 1730
Location: Job Site

CWI Name:	Salvador Merino/Fred Von Hoff			**CWI Present:**	☑ Yes	☐ No	
Inspected CWI report:	☐ Yes	☐ No	☑ N/A	**Rod Oven in Use:**	☑ Yes	☐ No	☐ N/A
Electrode to specification:	☑ Yes	☐ No	☐ N/A	**Weld Procedures Followed:**	☑ Yes	☐ No	☐ N/A
Qualified Welders:	☑ Yes	☐ No	☐ N/A	**Verified Joint Fit-up:**	☑ Yes	☐ No	☐ N/A
Approved Drawings:	☑ Yes	☐ No	☐ N/A	**Approved WPS:**	☑ Yes	☐ No	☐ N/A
				Delayed / Cancelled:	☐ Yes	☑ No	☐ N/A

Bridge No: 34-0006
Component: OBG Components

Summary of Items Observed:

On this date, Quality Assurance Inspector (QAI) Kenneth Riley was present at the San Francisco Oakland bay Bridge job site at Yerba Buena Island to observe erection and welding activities for the San Francisco Oakland Bay Bridge (SFOBB) project. This Quality Assurance Inspector (QAI) observed the following work performed by American Bridge/Fluor Enterprises (AB/F) personnel at the locations noted below:

A). Vent Holes
B). Lifting Lug Holes
C). Plate Stiffeners

The QAI observed that welder's Salvador Sandoval and Mike Jimenez was using the Shielded Metal Arc Welding (SMAW) process, with electrode E7018 for the Complete Joint Penetration weld in the flat (1G) position at 13W PP119.8 W5 Vent Hole (Sandoval) and 13W PP118.5 W5 Vent Hole (Jimenez). This QAI observed that the Welding Procedure Specification (WPS) used for this location was ABF-WPS-D15-1050A-CU and a 4.8mm electrode was being used for the intermediate and cover passes with welding amps measured at 285 (Jimenez). Mr. Sandoval had fit the 20mm plate insert for the vent hole and the QC inspector had verified the fit up. The information that was relayed to this QAI was that the fit up was good and the welder could start with the root pass welding. The welding amps were checked and verified by QC and QAI as being 135 for the 3.2mm electrode. The welder's were observed using weed burner's to pre-heat the area's prior to welding at 40 degrees Celsius (150 degrees F) which was verified using a tempstik and infrared gun by the QC. The welder was also observed by this QAI as using a chipping hammer, power grinder and power wire wheel for the interpass cleaning. The QC

inspector for this location was Fred Von Hoff and was observed verifying and documenting the welding parameters for this location, along with overseeing the welding operations. At the time of the observations no issues were noted by the QAI.

Later in the shift the welder Mike Jimenez had completed the weld listed above and had moved onto 13W PP118.8 W5 Vent Hole (Jimenez). The welder had fit the 20mm thick inserts with a copper backing at this location which was verified and accepted by the QC inspector Fred Von Hoff this information was relayed to this QAI. The welder then proceeded in using the Shielded Metal Arc Welding (SMAW) process, with electrode E7018 for the Complete Joint Penetration weld in the flat (1G) position. This QAI observed that the Welding Procedure Specification (WPS) used for this location was ABF-WPS-D15-1050A-CU and a 3.2mm electrodes were being used for the root and hot passes with welding amps measured at 135 (Jimenez). The welder's was observed using weed burner's to pre-heat the area's prior to welding at 40 degrees Celsius (150 degrees F) which was verified using a tempstik and infrared gun by the QC. The welder was also observed by this QAI as using a chipping hammer, power grinder and power wire wheel for the interpass cleaning. The QC inspector for this location was Fred Von Hoff and was observed verifying and documenting the welding parameters for this location, along with overseeing the welding operations. At the time of the observations no issues were noted by the QAI.

B). Lifting Lug Holes
The QAI observed welder Salvador Sandoval was performing carbon Arc Cutting (CAC) at 13W PP119.5 W4 2 & 4. The CAC was to remove the weld metal were the QC inspectors had discovered rejectable indications while performing Ultrasonic Testing (UT). The welder removed these locations and ground the cavity to a bright finish so the QC inspector could perform Magnetic Particle Testing (MT) of the excavations. The information was relayed that the MT was acceptable and the QC inspector took the measurements of the cavities. These measurements are as follows;

13W PP119.5 W4 #2
Length 80mm
Width 25mm
Depth 11mm

13W PP119.5 W4 #4
Length 130mm
Width 20mm
Depth 15mm

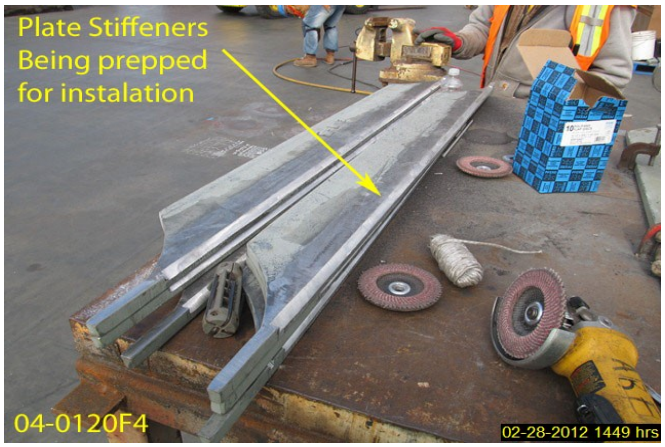
The welder then used duct tape to cover the cavities for the welding to take place later due to possibilities of rain tonight. At the time of the observations no issues were noted by the QAI.

C). Plate Stiffeners
This QAI observed the contractor preparing plate stiffeners to be installed at 12W/13W @ LS 3-5 and 13W/14W@ LS3-5. It was relayed to this QAI that this material being prepped is Gr 485 which will be welded to the Longitudinal Stiffeners which is also Gr 485. This QAI has spoken to QC regarding the WPS to be used for the partial penetration weld joints and was informed that the contractor does not at this time have an approved WPS for this location and position. It was relayed to the QC inspector that if the contractor proceeds to weld at these

locations without an approved WPS that they are doing so at their own risk and a Non-Conformance Report (TL-15) would be generated at that time. By the end of this day no welding has taken place.

The QA inspector observed the QC activities and the welding utilizing the WPS's as noted above, which appeared to be posted at the weld station. The welding parameters and surface temperatures were verified by the QC inspectors utilizing a Fluke 337 clamp meter for the electrical welding parameters and a Fluke 63 IR Thermometer for verifying the preheat and interpass temperatures. The consumables utilized for the welding process stated appeared to comply with the AWS Specification and AWS Classification. The QC inspection, testing and welding performed on this shift appeared to be in general compliance with the contract documents. At random intervals, the QAI verified the QC inspection, testing, welding parameters and the surface temperatures utilizing various inspection equipment and gages which included a Fluke 337 Clamp Meter and Tempilstik Temperature indicators.

Unless noted otherwise, all work observed on this date appeared to be in general compliance with the contract documents at the time of observations.



Summary of Conversations:

Basic conservation, fundamental to completion of the tasks at hand, occurred between this QAI and ABF QC personnel.

Comments

This report is for the purpose of determining conformance with the contract documents and is not for the purpose of making repair or fit for purpose recommendations. Should you require recommendations concerning repairs or remedial efforts please contact Nina Choy (510) 385-5910, who represents the Office of Structural Materials for your project.

Inspected By:	Riley,Ken	Quality Assurance Inspector
Reviewed By:	Levell,Bill	QA Reviewer